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SASKATCHEWAN HEALTH RESEARCH BOARD

ANNUAL REPORT

Period Ending March 31, 1982

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REGINA

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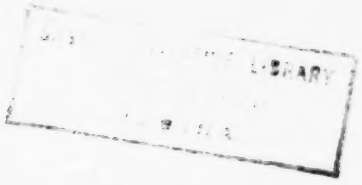

The Hon. Graham Taylor
Minister of Health
Room 208
Legislative Building
REGINA, Saskatchewan

Sir:

I beg to present herewith for your consideration the annual report of the Saskatchewan Health Research Board for the fiscal year ending March 31, 1982.

Respectfully submitted,

Agnes Groome

Dr. Agnes Groome
Chairman

AG:pb

SUMMARY AND HIGHLIGHTS

- The Saskatchewan Health Research Board (SHRB) held its second annual competition for grants-in-aid of research and personnel awards. The Board received 102 applications, of which 97 were eligible for consideration.

- For the first time, the grants-in-aid of research category was subdivided into biomedical and socio-health categories. Each category was assigned its own peer review committee. The division permitted a greater degree of specialization in judging applications for grants, and enabled the Board to pursue developmental work in the socio-health area.

- The Board initially awarded grants totalling $658,070 over a two-year period. As the standard stipend for both training and research fellowships was raised July 1, 1982, the revised commitment totalled $688,070.

- In the biomedical category, there were 44 applications requesting $1,480,415. The Biomedical Review Committee recommended funding 22 (50.0%) of these, in the amount of $646,640 (43.7%). Budgetary limitations permitted the eventual funding of only 13 applications (29.5%) for a total of $338,120 (22.8%).

- The 20 eligible socio-health applications received requested $543,053. The Socio-Health Review Committee recommended funding nine (45.0%) to a total of $128,702 (23.7%). The Board was able to fund seven (35.0%) in the amount of $107,700 (19.8%).

- The 33 personnel award applicants applied for $795,250. The Personnel Awards Committee recommended funding 15 (45.4%) - all in the research fellowship and training fellowship categories - involving a commitment of $260,500 (32.8%). The Board ultimately funded 13 (39.4%), involving an initial commitment of $212,250 (26.7%), which later became $242,250 as a result of an increase in amounts payable in the second year.

- The Radiation Advisory Committee (RAC), established to fund low-level radiation research projects, initiated or completed work on several fronts during the year. The SHRB considered and ratified key priorities for future development which will require long-term funding commitments.

- RAC held its first awards competition during the year. Five of eleven applicants were funded to conduct projects either as received or as amended to conform to SHRB priorities, with $212,415 committed over a two-year period.

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1. CHAIRMAN'S STATEMENT

The Saskatchewan Health Research Board had an active year in 1981-82. The Board held its second general competition, the results of which are reported in detail in this report. In addition, the first competition for low-level radiation research took place.

Like all new granting agencies, the SHRB underwent a period of development and maturation. We have had to ascertain the activities of the existing health research community and to develop and refine policies quickly in order to meet the growing needs of the Saskatchewan health research community. As a result, we are now able to reconsider our achievements to date, and to outline the major issues which will face us in the future.

The SHRB is at a crossroads in its development in five major areas. First, as this report shows, we remain unable to fund a large number of worthy projects proposed by the Saskatchewan research community. Even without considering new ventures of significant size, we continue to disappoint meritorious applicants because of budget restrictions. It is a great disappointment to us that our mandate to encourage and stimulate

health research on an increasingly wide front cannot be fulfilled as a result of these financial limitations.

Second, in our previous report we identified three areas in need of development: the human aging process, Native health, and environmental health research. It is now clear that these areas cannot be adequately developed without a firm commitment extending over several years. Again, this points to a need for the funds to "seed" major initiatives in these fields. Based on our experience to date, we cannot expect that the desired developments will take place on their own. Rather, there must be incentives for new and established researchers to become interested and proficient in these areas, and the SHRB would like to play a substantial role in this regard, in some cases in consultation with a number of organizations.

Third, it is now evident that the socio-health research area is starting from a smaller and less developed base than the biomedical research area. Major developmental work and emphasis are required. The SHRB developed the internal mechanisms required to highlight the socio-health area and its unique needs during 1981-82. Yet we cannot undertake the larger-scale initiatives we now think are necessary to develop the area properly without neglecting our other mandates. It would be very beneficial to establish a core group of seasoned socio-health researchers in the province who are able to conduct successfully large projects of great relevance. We cannot even con-

sider funding such measures given our current budget restrictions.

Fourth, the Board now recognizes that it may have to take a more active role in defining priorities. If we do restrict to some extent the nature of proposals to be considered in any given year, the decision will be based on a desire to avoid creating unrealistic expectations in the research community. We realize that drawing attention to a few fields may have the unhappy effect of discouraging researchers whose interests lie elsewhere. A great deal of time and effort go into drafting research proposals, and we are increasingly concerned at the numbers of high quality applications that cannot be funded. At the risk of becoming monotonous, we once again must point out that our scarce dollars cannot be stretched infinitely to cover all of the subject areas in which the Saskatchewan research community has demonstrated interest and expertise.

Fifth, the SHRB fully acknowledges its responsibility to monitor and evaluate its own programs and priorities. We have not been in a position to accumulate meaningful data on the outcome of our projects because we are such a new organization. However, we are now in the process of developing a system for determining, as far as possible, the impact of our grants on health status, the health care economy, health care management and organization, individual research careers, and the general performance of Saskatchewan researchers in the national context. Our data base will lend itself to more refined analysis as time

goes on, thus ensuring that scarce funds are most appropriately spent.

The administration of the low-level radiation fund has been a major priority of the Board. A substantial section of this report outlines the progress made to date. We cannot emphasize too strongly the importance of the radiation research area, and the need for long-range planning and funding if the research is to generate the results essential to the development of health and safety programs and policies.

The SHRB approaches the coming years with a mixture of enthusiasm and anxiety. We are delighted to have progressed so far in developing as a significant granting agency in the province. We are enthusiastic about the prospects for making a major impact on the health research and program field by identifying priorities and funding high-quality projects. Yet we are frustrated by the realization that without a great deal more money, we will be unable to proceed on a number of fronts. We are confident in the potential of the Saskatchewan health research community, and are equally confident that as a Board we have the commitment and expertise required to assist that community in its work. If Government shares this view, and sees fit to provide us with the funds to increase the scope and the magnitude of our activities, the Board will be able to fulfill its mandate.

Agnes Groome

Dr. Agnes Groome,
Chairman

2. LEGISLATIVE AUTHORITY AND MANDATE

The Saskatchewan Health Research Board (SHRB) was established as a corporate body under the provincial Health Research Act, proclaimed September 15, 1979, to administer the Health Research Fund. The Board was empowered under the Act to "assist and stimulate research in the healing arts and health sciences including:

- the causes, detection, distribution, prevention and management of human illness and disabling conditions;
- health maintenance and health promotion;
- the social, environmental, and biological aspects of the human aging process;
- the utilization of health services."

The Board is to consist of at least six and not more than twelve members appointed by the Lieutenant Governor in Council who are residents of Saskatchewan as follows: two representatives from the health sciences or healing arts in the University of Saskatchewan and one in the University of Regina, one member from the Saskatchewan Universities Commission, one from the Department of Continuing Education, one official from the Department of Health and up to six others. Both Chairman and Vice-Chairman are designated by the Lieutenant Governor in Council. Appendix 1 lists the members who served on the Board during 1981-82.

3. THE SASKATCHEWAN HEALTH RESEARCH FUND

With the proclamation of the Act, the Saskatchewan Health Research Fund came into being for the purpose of assisting

and stimulating research in the healing arts and health sciences. Into that fund, there is to be paid annually out of the consolidated fund, any monies that may be appropriated by the Legislature for the purposes of this Act. In each of the two fiscal years, 1979-80 and 1980-81, grants of $750,000 were allocated to the fund with the understanding that $500,000 of each grant be invested as capital and the $250,000 together with any earnings on investment be used by the Board for research in the health field and the payment of expenses incurred in the administration of this Act. The total budget in 1981-82 remained at $750,000, of which $250,000 was allocated to the capital fund, leaving $500,000 plus investment earnings usable for grants and administration. As stipulated in the Act, the Board is entitled to receive donations or bequests, subject to such terms of the donation or bequest as the Board considers advisable.

Attached to this report as Appendix 2 are the financial statements which detail the financial transactions of the Board and the auditor's report thereon.

4. COMPETITION AWARDS

4.1 Categories of Awards in the Second Competition

The Board decided to retain the general grant application categories developed for its first competition.

Grants-In-Aid (GIA) of Research

1. Establishment Grants to assist new researchers in becoming established in health research. Grants amounting to a maximum of $25,000 per annum for up to two years were non-renewable. They could be used for support personnel (technicians) and/or the purchase of equipment and supplies.

2. Research Grants of one to two years' duration, tenable only in Saskatchewan, in amounts not to exceed $25,000 per annum, to be awarded to established investigators. Funds could be used for materials and supplies and/or for personnel support such as technicians and graduate students.

3. Venture Grants to be awarded for unusual or innovative research ideas which may not fit into the more traditional categories. Grants of up to $5,000 could be awarded for meritorious and creative research proposals.

Personnel Awards

1. Training Fellowships to worthy persons wishing to develop their research careers in Saskatchewan. Awards were normally for periods of up to two years, though extensions are permissible in some circumstances. The awards have ranged in value from $6,750 to $9,000. Applications were accepted from individuals with a meritorious baccalaureate, master's or equivalent degree, who were planning to undertake a period of research training in Saskatchewan. Applicants intending to train outside Saskatchewan had to be willing to make a commitment to return to the province providing suitable employment were available.

2. Research Fellowships for a limited number of individuals with academic distinction who wished to develop their fields of research and to equip themselves for independent investigation in institutions in Saskatchewan. Awards have been for periods of up to two years and have ranged in value from $14,000 to $19,500 per year. Applications have been accepted from individuals with a Ph.D., M.D., D.D.S., D.V.M. or equivalent degree.

All applications for grants-in-aid of research were grouped together in the first competition. However, it was concluded from that experience that there should be more opportunity for specialization in judging the merits of the applications. Accordingly, for the second and third competitions applications were sub-divided into two categories: bio-medical and socio-health. Each category was assigned its own peer review committee.

A primary factor in establishing the socio-health category was to acknowledge the importance of the area, and the need to evaluate applications on the basis of scientific merit, relevance of the subject matter to Saskatchewan, the general state of knowledge in the field proposed, and the Board's mandate to encourage this type of work.

All personnel applications were left in a single group for adjudication. In all, then, three review committees evaluated the submissions in the second competition. Committee memberships incorporated a broad range of expertise in the health research and educational fields.

5. COMPETITION AND REVIEW PROCESS

The guidelines for 1981-82 to be followed by the review committees are found in Appendix 3. In the first (1980-81) competition, the then two review committees together consisted of seven Board members and seven non-members. In the second and third competitions, it was decided that only the Chairmen of the committees should be Board members, in order to ensure that the review process remained autonomous and at arm's length from the Board. In addition, the decision provided for a broader representation from the research community in the province. Appendix 4 lists the membership of the three review committees for the second competition (1981-82).

The review committees followed a system of peer review similar to that used by other granting agencies. Each application in the grants-in-aid category was sent out to one or more external reviewers expert in the area

of research in the proposal. Within the peer review committee itself, individual members became primary reviewers to make in-depth assessments of the scientific merit and relevance of the proposals or the research potential of candidates. After rating and ranking all applications, each committee had to recommend a cutoff point below which proposals should not be funded. These judgements were outlined in a report to the Board.

The Board retains responsibilities to determine the assignment of funds for the competition. To fulfill this function, the Board had to establish priorities to best serve the research needs of the community -- for example, the relative importance of providing advanced training for students; "start-up" grants for newly established investigators; equipment essential for complex projects; and grants to established investigators. The Board retains final authority to make all appropriations after considering the recommendations of its review committees.

6. PROFILE OF THE SECOND COMPETITION

6.1 Applications Received

When the second competition of the Saskatchewan Health Research Board closed on March 15, 1981, it resulted in the receipt of 102 applications of which 97 were considered eligible for consideration and review by the committees of the Board. Of the eligible applications, 44 were for biomedical grants-in-aid of research; 20 for socio-health grants-in-aid of research; and 33 for personnel awards (20 for training

fellowships, nine for research fellowships, and four for research scholar awards).

Submissions for bio-medical grants-in-aid fell principally into 12 categories:

- Nutrition and Obesity
- Development of Diagnostic and Measurement Techniques
- Rehabilitation Technology
- Pediatrics
- Cardiovascular Medicine and Surgery
- Immunology and Virology
- Respiratory Medicine
- Biochemical and Physiological Function
- Cancer
- Pharmacy and Pharmacology
- Obstetrics and Neonatology
- Neurology

Many applications overlapped several fields (See Appendix 5).

In the socio-health area, the main proposal categories were:

- Statistical Monitoring, Evaluation, and Needs Assessment
- Health Care History
- Gerontology
- Lifestyle Impact on Health Status
- Psychological Aspects of Health
- Mental Health
- Rehabilitation

- Health Education
- Morbidity Adjustment

Candidates sought training fellowships in the second competition to be tenable in the departments of sociology, biochemistry, psychology, orthopaedics, surgery, psychiatry, geriatric medicine, mechanical engineering, physical education, microbiology, pharmacology, continuing education, and educational psychology.

Research fellowship applications were for the departments of orthopaedic surgery, microbiology, obstetrics and gynecology, psychology, pharmacy, pharmacology, and physiology.

The four research scholar applicants represented the fields of medical genetics, surgery, pharmacology, and microbiology.

6.2 Recommendations of Review Committees

The personnel review committee recommended funding 15 out of 29 applications for training and research fellowships. In view of the potential funding commitment involved, the committee set a very high standard for judging research scholar applicants. Consequently, none of the four applications was recommended for funding. The bio-medical review committee recommended funding 22 of the 44 eligible applications (50.0 percent), while the socio-health review committee recommended funding nine of the 20 (45 percent) eligible research grant applications. The proportions recommended for funding did not change dramatically from the first competition's experience.

6.3 Awards Made by the Saskatchewan Health Research Board

The Board made available a total of $445,820 for grants-in-aid of research over a two-year period. The biomedical applicants were awarded $338,120, while the socio-health applicants were awarded $107,700.

As in the first competition, the Board placed a high priority on funding personnel training and research fellowship applicants. Thirteen of the 15 individuals recommended for funding accepted awards -- 10 for training fellowships and three for research fellowships. All but one of these was for two years; at the 1981-82 levels established in each category, the total commitment was $212,250 over the two-year period. On July 1, 1982, the annual stipends for training and research fellowships respectively became $9,000 and $17,250. Thus the total personnel commitment in competition two became $242,250. The grand total in all categories committed by the Board in competition two was $658,070 at the time decisions were made, which became $688,070 once the training and research fellowship increases took effect.

For several reasons, including late commencement of work under grants, and/or the completion of, termination from or withdrawal from courses of study before the two-year period has been completed, these figures do not accurately represent what was actually spent in each July-to-June grants year. The figures represent the Board's intent; the actual experience can be accurately tabulated only after a full accounting of all grantholders' expenditures is available upon formal termination of the project or personnel award.

Table 1 summarizes the bio-medical grants-in-aid of research applications by source and amount requested, numbers and amounts recommended, and numbers and amounts funded. Due to restricted funds the Board was able to provide grants to only 29.5 percent of the total applicants, covering only 22.8 percent of the total amount requested. Perhaps even more significantly, only 59.1 percent of projects deemed worthy by the review process could be funded, involving only 52.3 percent of the total amounts requested by these worthy applicants. Not a single applicant could be given the entire amount requested, despite the Board having set a rather low ceiling of $25,000 per annum per grant. All awards were reduced by 15 percent in a final budget-cutting session in order to maintain the Board in a sound financial position.

Table 2 provides a similar summary for socio-health applications. The Board ultimately funded seven of the 20 eligible applicants (35 percent), to a total of $107,700 (19.8 percent of the total amount requested). The review committee tended to reduce the amounts at the recommendation stage so the Board was able to fund seven of the nine (77.8 percent) of the recommended projects, and 83.7 percent of the recommended amount.

Table 3 summarizes the applications for personnel awards including the training location for recipients, the number of applications received, and the numbers recommended for approval by the personnel review committee and eventually funded by the Board.

TABLE 1

SUMMARY OF ELIGIBLE BIOMEDICAL APPLICATIONS RECEIVED, RECOMMENDED FOR FUNDING, AND EVENTUALLY FUNDED, BY SOURCE OF APPLICATION, COMPETITION TWO, 1981-82

Source	Total Applications No.	Total Applications Amount	Recommended No.	Recommended Amount	Funded No.	Funded Amount
Dentistry, College of, U of S	1	$ 13,800	1	$ 5,000	-	-
Engineering, College of, U of S	1	49,580	-	-	-	-
Home Economics, College of, U of S	1	54,000	-	-	-	-
Medicine, College of, U of S	30	1,054,651	17	480,527	11	277,909
Pharmacy, College of, U of S	2	54,754	1	49,879	1	42,397
Phys Ed, College of, U of S	1	42,475	1	42,475	-	-
Regina Water Research Institute, U of R	1	4,580	-	-	-	-
Science, Faculty of, U of R	1	44,382	-	-	-	-
Veterinary Medicine, College of, U of S	1	20,880	-	-	-	-
Joint Submissions*	5	141,313	2	68,759	1	17,814
TOTALS	44**	$1,480,415	22	$646,640	13	$338,120
% of Total Applications/Amounts			50.0%	43.7%	29.5%	22.8%
% of Recommended Applications/Amounts					59.1%	52.3%

* Includes Submissions of College of Medicine, U of S, with College of Pharmacy (2), Veterinary Medicine (1), Saskatoon Cancer Clinic (1), and Regina General Hospital (1)

** Excludes Applications Referred to the Radiation Advisory Committee (2); also Applications Declared Ineligible on Basis of Non-Residency in Saskatchewan (1), and Requesting Equipment Only (1); Amounts Requested Beyond Two Years; and Amounts Previously Requested and Funded as Part of Applications for Extended Funding

TABLE 2

SUMMARY OF ELIGIBLE SOCIO-HEALTH APPLICATIONS RECEIVED, RECOMMENDED FOR FUNDING, AND EVENTUALLY FUNDED, BY SOURCE OF APPLICATION, COMPETITION TWO, 1981-82

Source	Total Applications No.	Total Applications Amount	Recommended No.	Recommended Amount	Funded No.	Funded Amount
Arts, Faculty of, U of R	2	$ 27,176	-	-	-	-
Arts & Science, College of, U of S	6	168,187	2	39,500	2	39,500
Engineering, College of, U of S	1	7,000	1	7,000	1	7,000
Extension, Dept. of, U of R	1	50,000	-	-	-	-
Medicine, College of, U of S	4	130,194	2	43,874	1	27,500
Nursing, College of, U of S	1	5,000	1	5,000	1	5,000
Pharmacy, College of, U of S	1	4,700	1	3,700	1	3,700
Physical Education, College of, U of S	1	48,900	-	-	-	-
Regina Plains Community College	1	50,000	1	25,000	1	25,000
Science, Faculty of, U of R	2	51,896	1	4,628	-	-
TOTALS	20*	$543,053	9	$128,702	7	$107,700
% of Total Applications/Amounts			45.0%	23.7%	35.0%	19.8%
% of Recommended Applications/Amounts					77.8%	83.7%

* Excludes One Application Ineligible Because Requesting Extension of Venture Grant Previously Funded

TABLE 3

SUMMARY OF ELIGIBLE PERSONNEL APPLICATIONS RECEIVED, RECOMMENDED FOR FUNDING, AND EVENTUALLY FUNDED, BY SOURCE OF APPLICATION, COMPETITION TWO, 1981-82

Training Location for Recipients	Category	Applications Received No.	Applications Received Amount*	Recommended No.	Recommended Amount	Funded by Board No.	Funded by Board Amount
Arts & Science,	RSA**	-	-	-	-	-	-
College of,	RF	2	$ 56,000	1	$ 28,000	1	$ 28,000
U of S	TF	8	108,000	4	54,000	4[1]	54,000
Medicine,	RSA	4	280,000	-	-	-	-
College of,	RF	5	140,000	2	56,000	1[2]	28,000
U of S	TF	9	114,750	6	81,000	5[3]	60,750
Engineering,	RSA	-	-	-	-	-	-
College of,	RF	1	28,000	-	-	-	-
U of S	TF	1	13,500	-	-	-	-
Graduate Studies,	RSA	-	-	-	-	-	-
College of,	RF	-	-	-	-	-	-
U of S	TF	1	13,500	-	-	-	-
Pharmacy,	RSA	-	-	-	-	-	-
College of,	RF	1	28,000	1	28,000	1	28,000
U of S	TF	-	-	-	-	-	-
Physical	RSA	-	-	-	-	-	-
Education,	RF	-	-	-	-	-	-
College of,	TF	1	13,500	1	13,500	1	13,500
U of S							
TOTALS	RSA	4	$280,000	-	-	-	-
	RF	9	$252,000	4	$112,000	3	$ 84,000
	TF	20	$263,250	11	$148,500	10	$128,250
							$212,250

* Based on Minimum Stipend for Two Years

[1]One Declined, One Replaced
[2]One Declined, No Replacement
[3]Two Declined, One Replaced For One Year Only

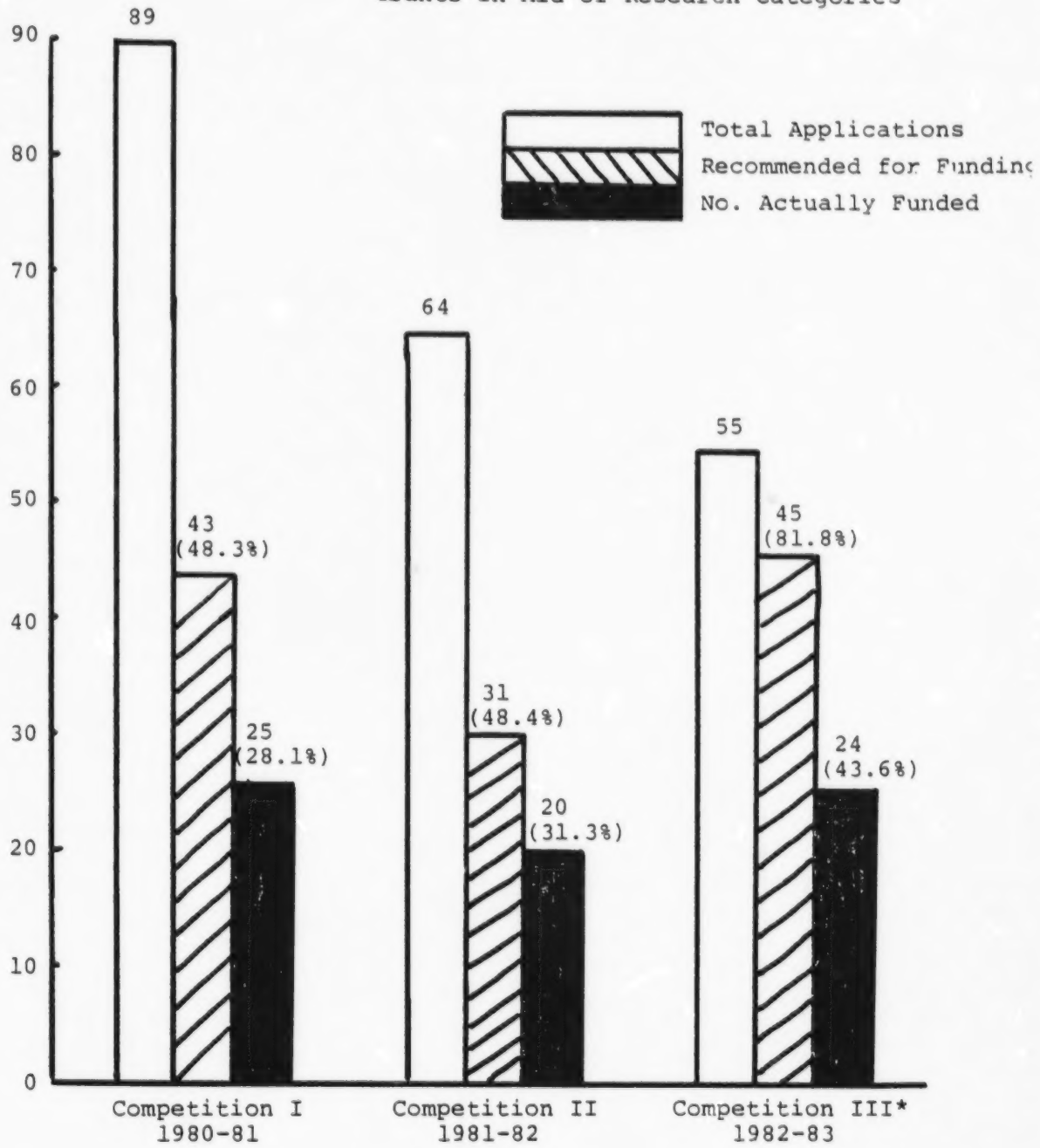
** RSA = Research Scholar Award
RF = Research Fellowship
TF = Training Fellowship

Figures 1 and 2 on the following pages illustrate graphically the possible impending crisis in the grants-in-aid of research categories. There are two trends worthy of special note.

1. The total number of applications has been dropping. This may indicate either that researchers are increasingly seeking and obtaining funds elsewhere, or more likely, that they are discouraged from applying in that they know that many worthy proposals will not be funded.

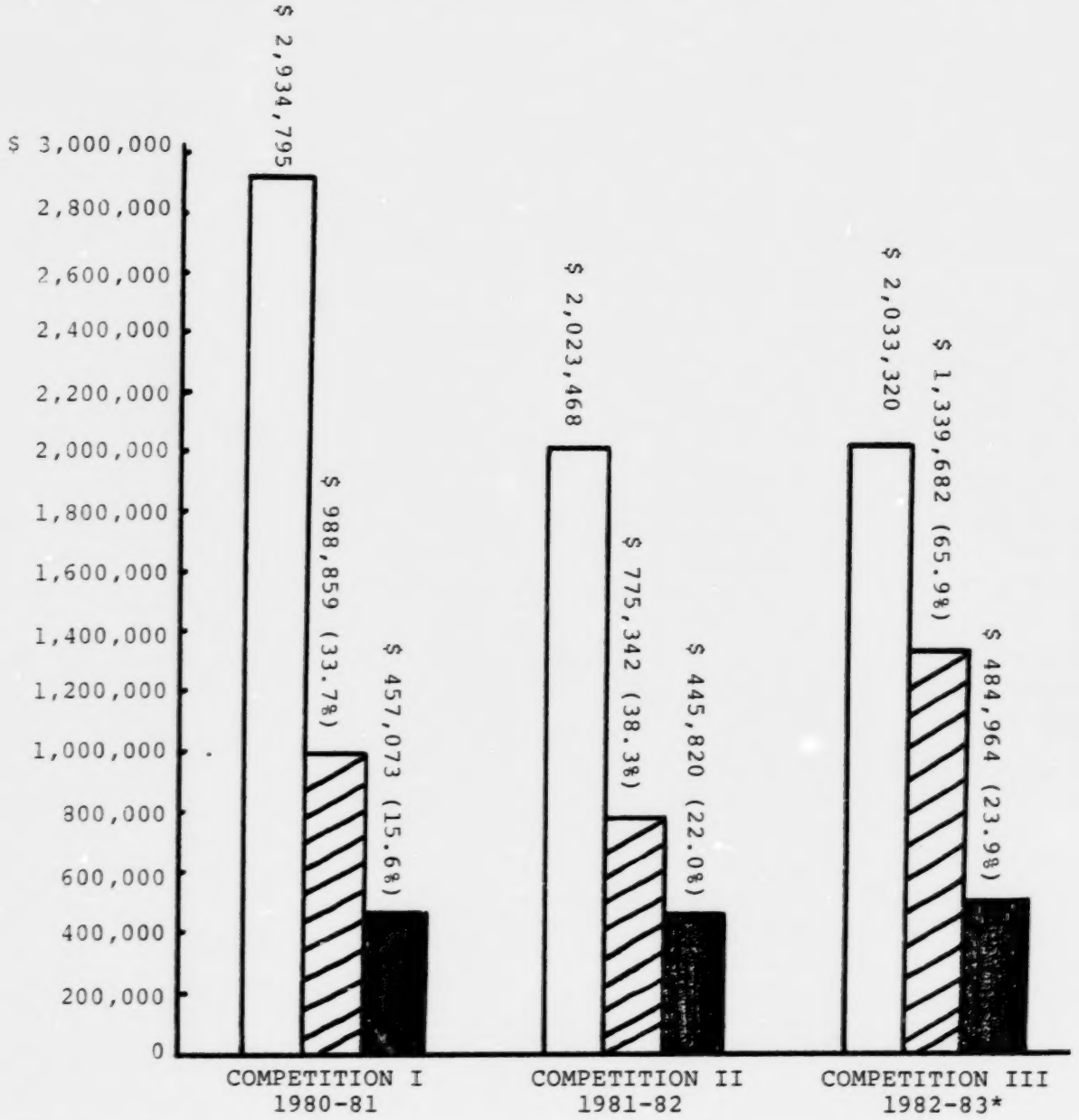
2. The proportion of applications recommended for funding has been increasing since Competition I. This indicates that the overall quality of proposals is improving, suggesting that the SHRB has at least begun to fulfill its mandate to better develop the research community. Given historical budgetary constraints, however, the Board cannot respond to the increases in numbers of high quality proposals with increased funding. If the trend continues, the gap between the number worthy of funding and the number actually funded will widen, creating a credibility problem for the competititon process.

FIGURE 1 Relationship Among Total Number of Applications, Number Recommended for Funding, and Number Actually Funded, Competitions I, II, and III Grants-in-Aid of Research Categories



* estimated as at October 1, 1982

FIGURE 2 Relationship Among Total Dollars Requested, Amount Recommended for Funding, and Amounts Actually Awarded, Competitions I, II, and III Grants-in-Aid of Research Categories



*estimated as at October 1, 1982

7. FUNDS FOR SPECIAL PURPOSES: LOW-LEVEL RADIATION RESEARCH

The Board is empowered under the Act to accept and administer funds for special purposes. The first grant which the Board consented to administer was for "low-level radiation research" from the Government of Saskatchewan.

7.1 Radiation Advisory Committee

In a letter of agreement of May 28, 1980, between the Department of Health and the Board, an advisory committee structure was outlined:

> A Radiation Research Advisory Committee will be established to advise the Health Research Board on the establishment of radiation research priorities, to screen research proposals, to monitor projects in progress, and to assist the Board with any other matters referred to it by the Board.
>
> However, it is understood that the Health Research Board will have complete executive powers over all aspects of radiation research projects funded by the Board.
>
> It is agreed that the Advisory Committee will be selected by the Health Research Board from nominees representing the Health Research Board and the Provincial Government, in equal numbers, plus additional members nominated by the first mentioned appointees. Generally, it is considered desirable to recognize the tripartite nature (the Board, the Provincial Government, and radiation experts) of interests represented on the Advisory Committee.

In Appendix 7, the membership of the Radiation Advisory Committee (RAC) from April 1, 1981 through March 31, 1982 is listed. This listing includes the consultants appointed by RAC to assist in defining objectives and analyzing technical aspects of radiation research questions.

7.2 Radiation Research Objectives

During 1980-81, RAC agreed on the general definition and objectives of radiation research.

> The general research objective is to establish the risk and effects of exposure to radiation, including all forms and sources, in the work place and elsewhere, with specific attention to the cumulative long-term effects of exposure.
>
> The research will be comprehensive, multi-disciplinary in nature, and it may be long-terms. Although knowledge and research data from elsewhere should be considered, the research program as a whole must address contemporary Saskatchewan issues and situations relating to radiation.
>
> Although long-term research is to be encouraged, demonstrated progress within the initial five-year assessment period is important.

7.3 Radiation Research Grant

In 1980-81, the Board received a grant of $200,000 as an initial fund to determine what areas of research would be most important to Saskatchewan. The Board received a further $400,000 for radiation research in 1981-82.

7.4 Radiation Research Planning and Priorities

RAC quickly became aware of the enormous scope and importance of low-level radiation research. The topic involves a large number of disciplines and a very high level of technical expertise. Many projects come to fruition only after data have been accumulated over many years. The possible implications of the research in terms of advanced training,

staffing, and capital investment are enormous. Additionally, while RAC consisted of members expert in a number of scientific areas, Saskatchewan possesses few experienced radiation research personnel, with some notable exceptions, and the entire field remains in an early stage of development.

All of these factors suggested a need for a carefully conceived plan to carry out the general mandate. Specifically, the strategy adopted involved:

1. the appointment of expert consultants to supplement the expertise on the committee itself, and to assist in subject definition, the exploration of feasibility of carrying out various projects, and the establishment of priorities;
2. the assembly of background information in subject areas likely to be highly relevant to Saskatchewan;
3. the commissioning of more specific feasibility studies in high priority subject areas;
4. the development of priorities taking into consideration the duration required for a specific study, the agencies whose participation would be involved to make the study successful, and the financial commitment required;
5. the presentation of findings to SHRB for discussion, amendment if necessary, and ratification.

Throughout 1981-82, RAC worked to develop its plans and priorities to a considerable degree of refinement.

7.5 Specific RAC Activities During 1981-82

The major activities conducted during 1981-82 were as follows:

1. the funding of a feasibility study for a whole-body counting facility in Saskatchewan including a review and analysis of the hardware, software and portability of equipment required; initial investment and ongoing operating costs; regulatory agency participation required; and possible cost-sharing with the uranium industry itself;
2. a visit to the Inhalation Toxicology Research Institute (ITRI) in Albuquerque, New Mexico to explore the nature and scope of a possible large-scale investigation (using test animals) of the biological hazards of materials inhaled by workers in the uranium industry;
3. the preliminary investigation of the feasibility of studying radionuclides in the environment, and more specifically, in the human food chain, including the scope, duration, and costs of the study;
4. the establishment of priorities for research in three general areas involving eight specific topics;
5. the awarding of research grants to applicants in the first RAC competition;
6. the development of a two-pronged approach -- open competition and contract -- to achieving high quality research results in Saskatchewan in the foreseeable future.

The final developmental work carried over into the summer of 1982, and by the fall RAC was ready to proceed on all fronts, contingent on a major funding commitment by government as a prerequisite for the successful completion of the larger projects envisioned.

7.6 Results of the First RAC Competition

RAC advertised for grant submissions in May 1981. The competition closed September 15, 1981. The competition was open, with no specific definition of subject areas to be investigated within the general field of radiation. RAC proceeded in this fashion in order to encourage applications from as many sources as possible.

The major guiding principle for RAC was the funding of research into low-level radiation relevant to circumstances in Saskatchewan. Therefore, RAC considered applicants from outside the province eligible for an award as long as the topic impinged directly on provincial concerns. The Project Review Committee (listed in Appendix 8) evaluated submissions on the basis of relevance, background and quality of applicant, quality of the specific proposal, and the location of the applicant/study.

Eleven applications were received in the first competition, requesting $537,516. (Two others arrived late and were not considered with the other 11.) Grants totalling $212,415 were awarded to five applicants. RAC considered it legitimate to suggest amendments to grantholders to add to or change the study design in order to yield results of highest

significance to the priorities established. Details of the grants awarded are listed in Appendix 6.

7.7 Planned Activities for 1982-83 and Subsequently

RAC has recommended to the SHRB that activity proceed on a number of fronts. First, now that RAC has established, and the Board has ratified, a number of key priorities, it is appropriate to contract research out to qualified individuals and organizations, particularly where the subject matter is quite specific and highly practical in implication. Second, RAC will continue to hold relatively unrestricted competitions in order to encourage research in the general area of low-level radiation, with topics emanating from the research community. Third, RAC would like to proceed with the whole-body counter project, which will involve cooperation among government, the uranium industry, and the research community, as well as a secure funding base extending over many years.

A number of smaller projects as well as those quite large in scope but finite in duration can be carried out without long term funding commitments. RAC has sufficient funds accumulated to hold one more competition even in the absence of a more secure and extended funding commitment from government. The nature and scope of the projects to be considered eligible for awards in the second competition will, however, be affected by the anticipated funding climate for the future. The major applied research projects with eventual implications for health status, regulatory policy, and environmental standards development cannot proceed without a long term funding commitment of significant size.

APPENDIX 1

MEMBERS OF THE BOARD

(April 1, 1981 to March 31, 1982)

Dr. Agnes Groome (Chairman)
Systems and Analytical Services
University of Regina
Regina, Saskatchewan

Dr. Alan A. Boulton
Director, Psychiatric Research
Division, Dept. of Health and
Professor, Dept. of Psychiatry
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan
(Representing Saskatchewan Health)

Mrs. Demi Dunlap[1]
Principal, Holliston School
1511 Louise Avenue
Saskatoon, Saskatchewan

Dr. David Eidinger
Professor and Head
Dept. of Microbiology
University of Saskatchewan
Saskatoon, Saskatchewan
(Representing University of
Saskatchewan)

Dr. Peter A.R. Glynn[2]
Executive Director
Saskatchewan Prescription Drug Plan
Department of Health
T.C. Douglas Building
3475 Albert Street
Regina, Saskatchewan

Mrs. Esther R. Grogin
Associate Professor of Nursing and
Associate Member in Continuing Education
Room 431, Ellis Hall
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Louis Horlick
Professor, Dept. of Medicine
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Sarah Landy[3]
Executive Director
Policy and Program Division
Dept. of Continuing Education
1855 Victoria Avenue
Regina, Saskatchewan
(Representing Department of
Continuing Education)

Ms. Elaine McNeil
Health Education Consultant
3175 Angus Street
Regina, Saskatchewan

Dr. James M. Naylor (Vice-Chairman)
Professor, Dept. of Biology
University of Saskatchewan
Saskatoon, Saskatchewan
(Representing University of
Saskatchewan)

Dr. Donald J. Philippon[4]
Director
Policy, Research and Management
Services Branch
Dept. of Health
T.C. Douglas Building
3475 Albert Street
Regina, Saskatchewan

Dr. William M. Sibley
Chairman, Saskatchewan
Universities Commission
2302 Arlington Avenue
Saskatoon, Saskatchewan
(Representing Universities
Commission)

Dr. Harvey Stalwick
Professor
Faculty of Social Work
University of Regina
Regina, Saskatchewan
(Representing University of
Regina)

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[1] Appointed October 1981
[2] Appointment Ended October 1981
[3] Appointed October 1981
[4] Represented Dept. of Continuing Education until October 1981

APPENDIX 2

FINANCIAL STATEMENTS

AND

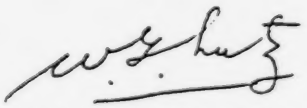
THE AUDITOR'S REPORT THEREON

AUDITOR'S REPORT

To the Members of The Legislative Assembly
Province of Saskatchewan

I have examined the balance sheet of the Saskatchewan Health Research Fund as at March 31, 1982 and the statements of revenue, expenditure and fund balance and changes in financial position for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Fund as at March 31, 1982 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.



Regina, Saskatchewan,
May 14, 1982.

W.G. Lutz, F.C.A.,
Provincial Auditor.

Statement 1

SASKATCHEWAN HEALTH RESEARCH FUND

BALANCE SHEET

March 31, 1982

ASSETS

	1982			
	General Fund	Radiation Fund	Combined	1981
Cash	$ 5,649	$ 16,484	$ 22,133	$ 8,472
Accrued interest receivable	80,636	8,719	89,355	67,802
Inter-fund receivable (payable)	3,541	(3,541)	-	-
Investments, at cost which approximates market value	1,738,236	587,699	2,325,935	1,568,997
Fixed assets	15,404	-	15,404	8,456
Other assets	1,993	-	1,993	482
	$1,845,459	$609,361	$2,454,820	$1,654,209

LIABILITIES AND FUND BALANCE

Grants payable	$ 556,404	$193,235	$ 749,639	$ 499,086
Accounts payable	4,000	1,367	5,367	5,862
	560,404	194,602	755,006	504,948
Equity in fixed assets	15,404	-	15,404	8,456
Fund balance - Statement 2	1,269,651	414,759	1,684,410	1,140,805
	$1,845,459	$609,361	$2,454,820	$1,654,209

(See accompanying notes to the financial statements)

Statement 2

SASKATCHEWAN HEALTH RESEARCH FUND

STATEMENT OF REVENUE, EXPENDITURE AND FUND BALANCE

For the Year Ended March 31, 1982

	1982			
	General Fund	Radiation Fund	Combined	1981
Revenue:				
Grant - Department of Health	$ 750,000	$ 400,000	$1,150,000	$ 950,000
Interest	283,499	97,714	381,213	185,501
Other	4,490	-	4,490	300
Total revenue	$1,037,989	$ 497,714	$1,535,703	$1,135,801
Expenditure:				
Research grants	652,832	212,415	865,247	674,123
Wages and benefits	62,484	-	62,484	50,615
Administrative and operating expenses	16,735	853	17,588	14,604
Honoraria and expenses of the board and/or committees	18,753	5,063	23,816	13,700
Furniture and fixtures	7,656	-	7,656	6,698
Rent	8,937	-	8,937	5,352
Feasibility Study	-	5,153	5,153	-
Consulting fees	-	1,217	1,217	1,000
Administration fee (Note 4)	(33,534)	33,534	-	-
Total expenditure	733,863	258,235	992,098	766,092
Excess of revenue over expenditure	304,126	239,479	543,605	369,709
Fund balance, beginning of year	965,525	175,280	1,140,805	771,096
Fund balance, end of year - to Statement 1	$1,269,651	$ 414,759	$1,684,410	$1,140,805

(See accompanying notes to the financial statements)

Statement 3

SASKATCHEWAN HEALTH RESEARCH FUND

STATEMENT OF CHANGES IN FINANCIAL POSITION

For the Year Ended March 31, 1982

	1982			
	General Fund	Radiation Fund	Combined	1981
Source of funds:				
Grant receipts	$ 750,000	$ 400,000	$1,150,000	$ 950,000
Interest and other receipts	270,661	93,489	364,150	123,637
	1,020,661	493,489	1,514,150	1,073,637
Application of funds:				
Grants paid	587,014	27,680	614,694	175,037
Other disbursements	76,452	52,405	128,857	90,269
	663,466	80,085	743,551	265,306
Increase in cash and investments	357,195	413,404	770,599	808,331
Cash and investments, beginning of year	1,386,690	190,779	1,577,469	769,138
Cash and investments, end of year (Note 3)	$ 1,743,885	$ 604,183	$2,348,068	$1,577,469
Comprised of:				
Cash	$ 5,649	$ 16,484	$ 22,133	$ 8,472
Investments	1,738,236	587,699	2,325,935	1,568,997
	$ 1,743,885	$ 604,183	$2,348,068	$1,577,469

(See accompanying notes to the financial statements)

SASKATCHEWAN HEALTH RESEARCH FUND

NOTES TO FINANCIAL STATEMENTS

March 31, 1982

1. Authority

The Saskatchewan Health Research Fund is a special purpose fund established under the provisions of The Health Research Act and is administered by the Saskatchewan Health Research Board for the purpose of assisting and stimulating research in the healing arts and health sciences. Pursuant to proclamation of the Act, the Fund came into being on September 15, 1979. During 1981 the Board was awarded status as a registered charity under The Income Tax Act.

The Radiation Fund was established in the 1981 fiscal year pursuant to an agreement entered into between the Department of Health and the Saskatchewan Health Research Board under which the Board agreed to administer and allocate monies received from the Department. The agreement also provides that the use of these funds be restricted to radiation research and costs incurred in administering and allocating the funds.

2. Accounting Policies

(a) Fund Accounting

The Saskatchewan Health Research Fund follows fund accounting procedures in which a self-balancing group of accounts is provided for both the General Fund and the Radiation Fund.

(b) Grant Awards

The Saskatchewan Health Research Board holds annual competitions through which funds are awarded to successful applicants for terms of up to two years. The Fund follows the policy of recording the grant awards approved and committed during the year as expenditures. At year end, awards which have not been paid but are still committed for a competition are shown as grant awards payable on the balance sheet of the Fund. In the event of the completion or termination of a project, or non-compliance with the terms of an award, the balance of unexpended funds is treated as a reduction of grant expenditure in the year that this is determined. These funds are then available to be awarded for future research.

(c) Fixed Assets

Fixed asset purchases are charged as an expense against operations in the year of purchase and are therefore not depreciated. All fixed asset additions charged to expense are reflected in the statement of revenue, expenditure and fund balance. To reflect accountability for fixed assets in the financial statements, it is necessary to record them as balance sheet assets with a corresponding entry to "Equity in Fixed Assets".

2. Accounting Policies - (continued)

(d) Investments

The Fund records investment transactions at cost.

3. Cash and Investments

In accordance with a request of the Department of Health, the Saskatchewan Health Research Board agreed to retain $500,000 of the Provincial grant received each of the first two years and $250,000 of the Provincial grant received in the third year for the General Fund as invested capital. Accordingly, the Board considers that, of the cash and investments balance at March 31, 1982, $1,250,000 (1981 - $1,000,000) is being retained as 'invested capital' of the General Fund.

4. Administration Costs

Costs incurred in the administration of the General Fund are paid from that Fund with the Radiation Fund reimbursing the General Fund for a percentage of total costs of administration after deducting Board members' expenses.

APPENDIX 3

SASKATCHEWAN HEALTH RESEARCH BOARD

TERMS OF REFERENCE FOR REVIEW COMMITTEES

(Amended 1981)

1. That the Chairman of each of the three Committees be a Board member.

2. That there be no other Board member serving on any of the Review Committees.

3. That the Chairman of the Committee have a casting vote only in order to break a tie.

4. That the Chairman of each Committee be responsible for the following:

   a) To select and assign applications to primary reviewers on his Committee;

   b) Together with the Committee members, the Chairman will select external peer reviewer(s) in Saskatchewan and/or outside the province for each grant-in-aid application;

   c) The programming, harmonization and chairing of the Review Committee meetings in such a way as to arrive at conclusions and recommendations to the Board within the time frame of the agreed period, i.e., March 15 - May 15;

   d) The preparation of the report including recommendations of the Committee and presentation of it to the Board.

5. The prime objective and the responsibility of each Committee is to review the grant applications strictly on the basis of their scientific merit. The Committee should also recommend a cutoff point below which no grants would be funded, i.e., recommend a payline.

6. It is strongly emphasized that the deliberations and recommendations of the Committees must always be kept in strict confidence.

APPENDIX 4

GRANTS-IN-AID BIOMEDICAL REVIEW COMMITTEE 1981-82

Dr. Louis Horlick (Chairman)
Professor
Department of Medicine
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. W. Wayne Lautt
Associate Professor
Department of Physiology
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. W.H. Kirkaldy-Willis
Professor of Surgery
Department of Orthopaedic Surgery
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Helmut Bertrand
Professor
Department of Biology
University of Regina
Regina, Saskatchewan

Dr. D.J. Klaassen
Director
Saskatoon Cancer Clinic
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. J.E.C. Bellamy
Professor of Veterinary Pathology
College of Veterinary Medicine
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Gordon E. Johnson
Professor and Head
Department of Pharmacology
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. B.D. McLennan
Professor
Department of Biochemistry
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Jonathan R. Dimmock
Professor
College of Pharmacy
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. S. Fedoroff
Professor and Head
Department of Anatomy
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Ian A. Ramshaw
Associate Professor
Department of Microbiology
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. David W. Tyler
Associate Professor and Head
Department of Oral Biology
College of Dentistry
University of Saskatchewan
Saskatoon, Saskatchewan

APPENDIX 4

GRANTS-IN-AID SOCIO-HEALTH REVIEW COMMITTEE 1981-82

Dr. Harvey N. Stalwick (Chairman)
Professor
Faculty of Social Work
University of Regina
Regina, Saskatchewan

Dr. Harold R. Baker
Professor of Extension
Associate Member in
Continuing Education
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Jack A. Boan
Professor
Department of Economics
University of Regina
Regina, Saskatchewan

Dr. B. Singh Bolaria
Associate Professor and Head
Department of Sociology
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Carl D'Arcy
Clinical Assistant Professor
Department of Psychiatry
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Donald G. Fischer
Professor
Department of Psychology
University of Saskatchewan
Saskatoon, Saskatchewan

Ms. Norma J. Fulton, R.N., M.C.Ed.
Associate Professor of Nursing
Director of Continuing Nursing Education
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Vince L. Matthews
Professor and Head
Department of Social and
Preventive Medicine
University of Saskatchewan
Saskatoon, Saskatchewan

Mr. Graham C.P. Riches, M.A., Dip. S.A.
Assistant Dean of Social Work
Faculty of Social Work
University of Regina
Regina, Saskatchewan

Dr. Richard Shillington
Research Officer
Policy, Research and Management
Services Branch
Department of Health
Government of Saskatchewan
T.C. Douglas Building
3475 Albert Street
Regina, Saskatchewan

APPENDIX 4

PERSONNEL REVIEW COMMITTEE 1981-82

Dr. Alan A. Boulton
Director, Psychiatric Research
Division, Dept. of Health and
Professor, Dept. of Psychiatry
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan

Mr. Don A. Bailey, P.E.D.
Professor
College of Physical Education
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Taylor A. Steeves
Professor and Head
Department of Biology
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Robert M. Stirling
Professor
Department of Sociology
University of Regina
Regina, Saskatchewan

Ms. Lucy D. Willis, R.N., Ed.D.
Professor of Nursing
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Rod A. Kelln
Associate Professor
Department of Chemistry
University of Regina
Regina, Saskatchewan

Dr. R. Marvin Bala
Head, Dept. of Medicine
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Tom B. Wishart
Associate Professor and Head
Department of Psychology
University of Saskatchewan
Saskatoon, Saskatchewan

APPENDIX 5

SUMMARY OF APPLICATIONS RECEIVED

Nutrition and Obesity

Proposals included the regulation of glycogen metabolism in developing rat liver; the zinc status of the elderly in Saskatoon; metabolic, endocrine, and nutrition profiling as a prevention approach to high-risk pregnancies; endogenous apioid peptides and obesity.

Development of Diagnostic and Measurement Techniques

Proposals included the characterization of somatomedin receptors; investigation of the electochemical techniques for the measurement of alkaline and acid phosphatase activity; the development and testing of an in-field coliforn test for the rapid monitoring of the hygienic quality of water supplies at remote recreational locations; impletion of a health status matrix for measuring surgical outcome; correlation of fluphenazine plasma levels versus clinical responses in patients.

Rehabilitation Technology

Proposals included the development of a prototype stimulator to improve the voluntary and coordinated control of muscle function in disabled patients; a semi-automatic device for the dental hygiene of institutionalized debilitated patients; and the transplantation of spinal cord fragments.

Pediatrics

Proposals included the study of the interrelationship between hemoglobin, hemoglobin-oxygen affinity and maximal oxygen uptake in children and young adults; the frequencies of specificities and origins of autoantibodies in juvenile rheumatoid arthritis; the influence of physical activity on serum lipid and lipoprotein profiles in pre-adolescent children.

Cardiovascular Medicine and Surgery

Proposals included the study of the improvement of myocardial oxygen delivery using 2, 3-diphosphoglycerate-enriched red cells; pressor responses and cardiovascular reflex activity in DOCA-salt hypertensive rats and volume depleted rats during vasopressin infusions.

Immunology and Virology

Proposals included the study of the immunosuppressive effects of antiviral nucleoside analogs; the regulation of gluconeogenesis in escherichia coli; synthesis and study of antiviral properties of nucleosides, together with x-ray analysis of 5-substituted pyrimidine deoxyribonucleosides; autoantibodies to cytoskeletal intermediate filaments as related to rheumatic disease; serological survey of Saskatoon adults.

Respiratory Medicine

Proposals included the study of alpha$_1$-antitrypsin phenotypes in patients with obstructive airway disease; respiratory symptoms and lung function in Saskatchewan farmers; alpha$_1$-antitrypsin phenotypes in a Saskatchewan population: their relationship to chronic obstructive pulmonary disease, pulmonary function and infant mortality; respiratory support in severe blunt chest trauma - a comparison of the effect of two ventilatory modes on cardio-pulmonary function and pulmonary mechanics.

Biochemical and Physiological Function

Proposals included the study of the effect of ethanol on the developing brain; control of endothelial permeability to lipids; regulation of gluconeogenic enzymes in veillonella parvula; clinical significance of the binding of the binding of neuroleptics to blood constituents.

Cancer and Malignancy

Proposals include the study of dietary manipulation and induction of cancer in mice; role of calmodulin in the normal and malignant cell growth regulation; study of malignant hyperpyrexia in the canine species; identification of "benign" group of "histiocytic" lymphomas by ultrastructural, immunological and clinical study; the in-vitro agar colony growth of peripheral blood mononuclear cells of cancer patients - response to phytohemagglutin and phorbol myristate acetate; antigens expressed by mouse mammary adenocarcinomas.

Pharmacy and Pharmacology

Proposals included the study of the development and evaluation of a model computer- assisted drug use review program; pharmacokinetics and dosage requirements of tobramycin and gentamicin in hospitalized patients.

Obstetrics and Neonatology

Proposals included the study of intraventricular hemorrhage in preterm infants - continuous sequential blood flow, mean arterial pressure, and mean arterial oxygen tension; a post menarcheal ovulation study; animal models for infant apnea and hypoxic death.

Neurology

Proposals included the study of hormonal regulation of c-AMP levels in the brain; the mutual interaction between $CA^{2}+$, calmodulin and neuroleptic drugs; texural analysis for CT-scanned head imagery - classification of different intracranial hemorrhages in neonates; the role of myo-inositol in multiple sclerosis.

Statistical Monitoring, Evaluation, Needs Assessment

Proposals included the evaluation of a computer-assisted medication refill reminder system; assessment of the need for and feasability of psychological services in the Saskatchewan health system; follow-up of a Saskatoon juvenile diversion program; data synthesis and analysis of a mixed longitudinal study of Saskatchewan girls aged 7 - 16; evaluation of a health service provided nursing faculty and students for adults in a basic education program.

Lifestyle Impact Upon Health Status

Proposals included the study of occupational stress on teachers in Regina; a general investigation of occupational stress and strain in Saskatchewan.

Psychological Aspects of Health

Proposals included clinical, psychological and biological studies on agoraphobia; an investigation of the effect of chronic administration of antipsychotics on the behaviour of rats with particular emphasis on social-sexual behaviour patterns.

Mental Health

Proposals included explorations in the social epidemiology of stress-life events and life strains in the Saskatchewan population; an infant mental health project for mother/infant pairs at risk.

Health Education

Proposals included a childbirth education research project; the training of direct service providers in a group treatment for anxiety.

Morbidity Adjustment

Proposals included a study of coping with physical illness; psychosocial adjustment to breast cancer.

Other Studies

Proposals included a study of nurses and the Medicare crisis of 1962 in Saskatchewan; mortality changes and differentials in Saskatchewan; an investigation of the effect of indoor humidity on the transmission of disease; voice as a man/machine interface; applied communications technology for physically and mentally disabled persons.

APPENDIX 6

AWARDS GRANTED IN THE SECOND COMPETITION

I PERSONNEL AWARDS

A. TRAINING FELLOWSHIPS

AWARDEE	SUPERVISOR	DISCIPLINE	INSTITUTION	AMOUNT	DURATION
Back, D.W.	J.F. Angel	Biochemistry	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Davies, G.F.	T.B. Wishart	Psychology	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Faulkner, K.A.	D.A. Bailey	Physical Education	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Hoon, D.B.S.	I.A. Ramshaw	Microbiology	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Jesberger, J.A.	J.S. Richardson	Pharmacology	University of Saskatchewan	$6,750	1981-82
Peters, L.	R. Fischer	Psychology	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Predy, P.A.	L. Kokkinidis	Psychology	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Shoemaker, E.D.	B. Morris	Educational Psychology	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Turnbull, J.L.	R.A. Hickie	Pharmacology	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83
Witney, G.D.	C. D'Arcy	Psychiatry and Geriatric Medicine	University of Saskatchewan	$6,750 $9,000	1981-82 1982-83

B. RESEARCH FELLOWSHIPS

AWARDEE	DISCIPLINE	INSTITUTION	AMOUNT	DURATION
Rao, D.V.	Pharmacy	University of Saskatchewan	$14,000 $17,250	1981-82 1982-83
Walls, E.K.	Psychology	University of Saskatchewan	$14,000 $17,250	1981-82 1982-83
Wei, I.	Pharmacology	University of Saskatchewan	$14,000 $17,250	1981-82 1982-83

II GRANTS-IN-AID OF RESEARCH

A. VENTURE GRANTS

AWARDEE	DISCIPLINE	INSTITUTION	PROJECT	AMOUNT	DURATION
Caplin, A.E.	Nursing	University of Saskatchewan	Nurses and the Medicare Crisis, 1962	$5,000	1981-82

B. DEVELOPMENT GRANTS

AWARDEE	DISCIPLINE	INSTITUTION	PROJECT	AMOUNT	DURATION
Blackburn, J.L.	Pharmacy	University of Saskatchewan	Evaluation of a Computer-Assisted Medication Refill Reminder System	$3,700	1981-82
Brandell, B.R.	Anatomy	University of Saskatchewan	Development of a Prototype Stimulator to Improve the Voluntary and Co-ordinated Control of Muscle Function in Disabled Patients	$3,060	1981-82
Thornhill, J.A.	Physiology	University of Saskatchewan	Endogenous Opioid Peptides and Obesity	$21,250 $21,250	1981-82 1982-83
Young, G.B; Bader, W.J.; Mendelson, L.S.	Clinical Neurological Sciences	University of Saskatchewan	The Role of Myo-Inositol in Multiple Sclerosis	$4,250	1981-82

C. RESEARCH GRANTS

AWARDEE	DISCIPLINE	INSTITUTION	PROJECT	AMOUNT	DURATION
Fedoroff, S.	Anatomy	University of Saskatchewan	Effect of Ethanol on the Developing Brain	$21,250 $21,250	1981-82 1982-83
Fischer, D.G.	Psychology	University of Saskatchewan	Saskatoon Juvenile Diversion Program: Follow-Up 1981	$10,000 $12,500	1981-82 1982-83
Goldie, A.H.	Microbiology	University of Saskatchewan	The Regulation of Gluconeogenesis in Escherichia Coli	$21,238 $21,012	1981-82 1982-83
Green, G.H.	Mechanical Engineering	University of Saskatchewan	Investigation of the Effect of Indoor Humidity upon the Transmission of Disease	$7,000	1981-82
Haig, T.H.B.	Surgery	University of Saskatchewan	Implementation of a Health Status Matrix for Measuring Surgical Outcomes	$19,227 $20,757	1981-82 1982-83
McNeill, J.R.	Pharmacology	University of Saskatchewan	Pressor Responses and Cardiovascular Reflex Activity in DOCA-salt Hypertensive Rats and Volume Depleted Rats During Vasopressin Infusions	$17,731 $16,699	1981-82 1982-83
Midha, K.K.; Keegan, D.L.; Dudley, J.; Hawes, E.M.	Pharmacy	University of Saskatchewan	Correlation of Fluphenazine Plasma Levels versus Clinical Response in Patients: A Pilot Study	$17,814	1981-82
Ng, S.K.	Microbiology	University of Saskatchewan	Regulation of Gluconeogenic Enzymes in Veillonella Parvula	$21,224 $20,961	1981-82 1982-83
Robart, C.D.	Public Health	Regina Plains Community College	Childbirth Education Research Project (Phase II)	$25,000	1981-82
Rosenberg, A.M.	Pediatrics	University of Saskatchewan	The Frequencies, Specificities and Origins of Autoantibodies in Juvenile Rheumatoid Arthritis	$12,750	1981-82
Sankaran, K.; Bingham, W.; Donat, J.	Pediatrics	University of Saskatchewan	Intraventricular Hemorrhage in Preterm Infants -- Continuous Sequential Polygraphic Study of Intracranial Pressure, Estimated Cranial Blood Flow (CBF), Mean Arterial Pressure (MAP) and Mean Arterial Oxygen Tension ($PACO_2$)	$4,250	1981-82

RESEARCH GRANTS (continued)

AWARDEE	DISCIPLINE	INSTITUTION	PROJECT	AMOUNT	DURATION
Skinnider, L.F.	Pathology	University of Saskatchewan	Identification of "Benign Group" of "Histiocytic" Lymphomas by Ultrastructural, Immunological and Clinical Study	$9,750	1981-82
Syrotuik, J.M.	Psychiatry	University of Saskatchewan	An Investigation of Occupational Stress and Strain in Saskatchewan	$16,500 $11,000	1981-82 1982-83
Verbeeck, R.K.	Pharmacy	University of Saskatchewan	Clinical Significance of the Binding of Neuroleptics to Blood Constituents	$21,250 $21,147	1981-82 1982-83
Wishart T.B.	Psychology	University of Saskatchewan	An Investigation of the Effects of Chronic Administration of Antipsychotics on the Behavior of the Rat with Particular Emphasis on Social-Sexual Behavior Patterns	$8,000 $9,000	1981-82 1982-83

APPENDIX 7

MEMBERS OF THE RADIATION ADVISORY COMMITTEE
to the SASKATCHEWAN HEALTH RESEARCH BOARD

(April 1, 1981 to March 31, 1982)

Dr. James M. Naylor (Chairman)
Professor, Department of Biology
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Alan A. Boulton
Director, Psychiatric Research
Division, Dept. of Health and
Professor, Dept. of Psychiatry
University of Saskatchewan
University Hospital
Saskatoon, Saskatchewan

Dr. David Eidinger
Professor and Head
Department of Microbiology
University of Saskatchewan
Saskatoon, Saskatchewan

Mr. W.F. (Rick) Roger
Acting Executive Director
Saskatchewan Hospital Services Plan
T.C. Douglas Building
3475 Albert Street
Regina, Saskatchewan

(Mr. Roger is temporary representative for the Department of Health)

Mr. Robert Sass
Associate Deputy Minister
Department of Labour
1150 Rose Street
Regina, Saskatchewan

Mr. Randy R. Sentis
Director, Mines Pollution Control Branch
Department of the Environment
55 Thirteenth Street East
Prince Albert, Saskatchewan

To date, RAC has appointed the following three scientists to act as consultants in particular areas of health-related radiation research:

Dr. David V. Bates
St. Paul's Hospital
Pulmonary Research Laboratory
1081 Burrard Street
Vancouver, British Columbia

Dr. Lloyd D. Skarsgard
B.C. Cancer Research Centre
602 West Tenth Avenue
Vancouver, British Columbia

Dr. L.D. Brown
Chief Radiation Health Physicist
Occupational Health and Safety Branch
Department of Labour (Saskatchewan)
1150 Rose Street
Regina, Saskatchewan

APPENDIX 8

RAC PROJECT REVIEW COMMITTEE 1981-82

Dr. Alan A. Boulton
Director, Psychiatric Research
Division, Dept. of Health and
Professor, Dept. of Psychiatry
University Hospital
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. R.E. Redmann
Professor
Department of Plant Ecology
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Patricia Tones
Research Scientist
Saskatchewan Research Council
30 Campus Drive
Saskatoon, Saskatchewan

Dr. David Fish
Head
Dept. of Social & Preventive
Medicine
University of Manitoba
750 Bannatyne Avenue
Winnipeg, Manitoba

Ms. S.O. Fedoruk
Director
Physics Services
Saskatchewan Cancer Foundation
University Hospital
Saskatoon, Saskatchewan

Dr. L.H. Greenberg
Head
Department of Physics and Astronomy
University of Regina
Regina, Saskatchewan

Dr. L.H. Skarsgard
B.C. Cancer Research Centre
601 West Tenth Avenue
Vancouver, British Columbia

Dr. N.O. Nielsen
Dean
Western College of Veterinary Medicine
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. R.J. Woods
Professor
Dept. of Chemistry & Chemical Engineering
University of Saskatchewan
Saskatoon, Saskatchewan

Dr. Bruno Schiefer
Professor
Department of Pathology
Western College of Veterinary Medicine
University of Saskatchewan
Saskatoon, Saskatchewan

EX OFFICIO

Dr. J.M. Naylor
Chairman
Radiation Advisory Committee
to the Saskatchewan Health
Research Board

Dr. Agnes Groome
Chairman
Saskatchewan Health
Research Board

Dr. F. Fried
Executive Director
Saskatchewan Health Research Board

APPENDIX 9

SASKATCHEWAN HEALTH RESEARCH BOARD

RADIATION ADVISORY COMMITTEE (RAC)

AWARDS GRANTED IN THE

FIRST YEAR COMPETITION (1981-82)

1) GHADIALLY, Feroze Novroji; LINDSAY, W.S.

Tracking and Localizing Uranium Cells and Tissues With the Electron Microscope and Electron-Probe X-Ray Analysis; Dept. of Pathology, University of Saskatchewan

1st Year - $21,500 2nd Year - $21,500

2) LEVY, Julia Gerwing

The Screening of Sera from Healthy Individuals for the Presence of Antibodies Reactive With an Antigen Isolated From a Human Lung Cancer Cell Line; Dept. of Microbiology, University of British Columbia

1st Year - $14,600

3) MATTHEWS, V.L.

Evaluation of Personal Radiation Dosimetry in Open-Pit Environment; Dept. of Social and Preventive Medicine, University of Saskatchewan.

1st Year - $30,000 2nd Year - $49,450

4) SWANSON, Stella Marie

A Study of the Transfer of Radionuclides in an Aquatic System and Their Possible Effects on Fish and Human Populations; Saskatchewan Research Council

1st Year - $56,665

5) YOSHIDA, Ken

Analyses of Radioactive Aerosol and Quartz for the Assessment of Mixed Exposure of Miners in an Open-Pit Operation; Saskatchewan Research Council.

1st Year - $18,700